

Managing Bats in Buildings

The NPS Perspective

Jeremy Moss

Tumacácori National Historical Park

Bats in NPS Buildings

- Variety of NPS structures that may have bats
 - Modern
 - Offices, housing (employee, visitor), storage
 - Historic Buildings and Structures (often includes Visitor Centers and other facilities/public areas, bridges, etc)



- Archaeological Sites (adobe and stone masonry structures)
- Shelters covering archaeological sites





Casa Grande National Monument, AZ

EXPERIENCE YOUR AMERICA

- Deciding whether to exclude from NPS buildings
 - risk assessment, decision tree
 - need to know species and type of use
- Other options
 - e.g. close buildings during roosting season, repurpose/adapt buildings, etc.



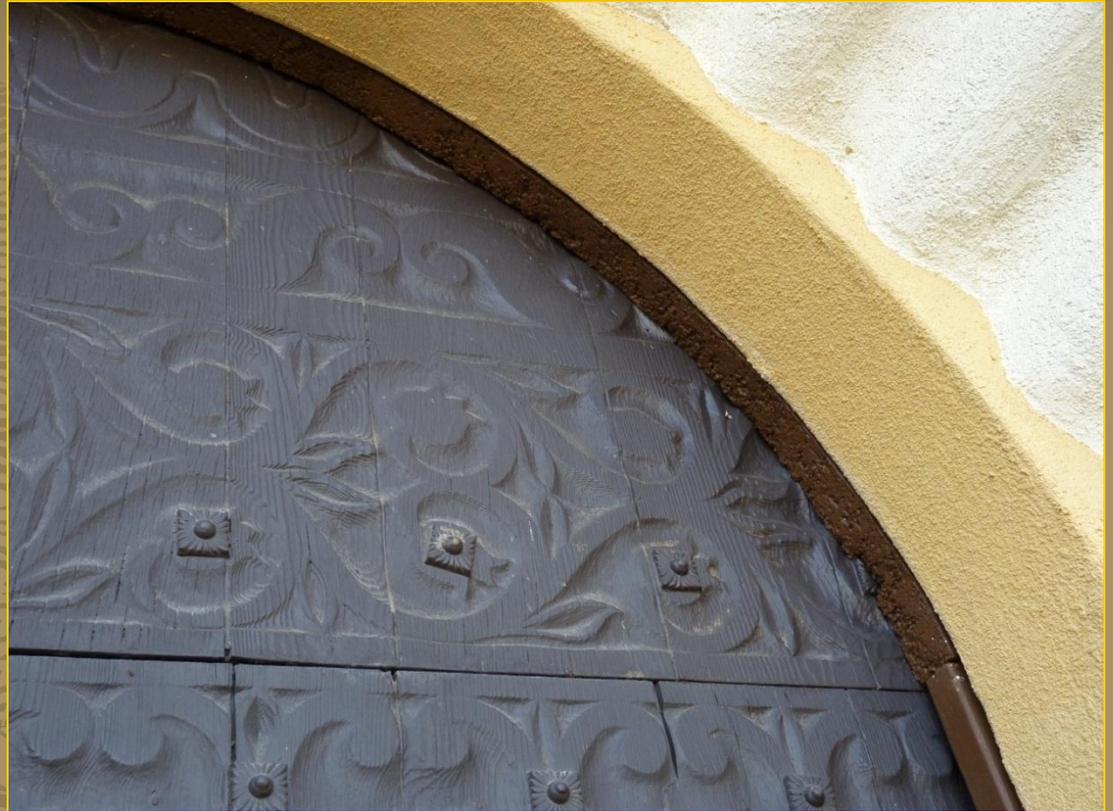
Exclusion Techniques-NPS

- Exclusion considerations and techniques for historical/cultural/archaeological structures:
 - Locating and removing openings. If already being used timing is key to avoid impacts to species/interactions.
 - Use of bird netting to remove potential roosting locations and temporarily cover existing holes being used as entry points.

- Assessment of surfaces
(bats like rough surfaces they can hang on to)
- Survey to identify species (behavior can differ)
- T&E present?



Exclusion Techniques-NPS



Example of exclusion of bats using gap in doorway

Exclusion Techniques-NPS



Removal/exclusion from attic, netting is loose on bottom end allowing bats to leave but not re-enter



Smooth

Rough

Consider the surfaces where bats roost and plan ahead

EXPERIENCE YOUR AMERICA



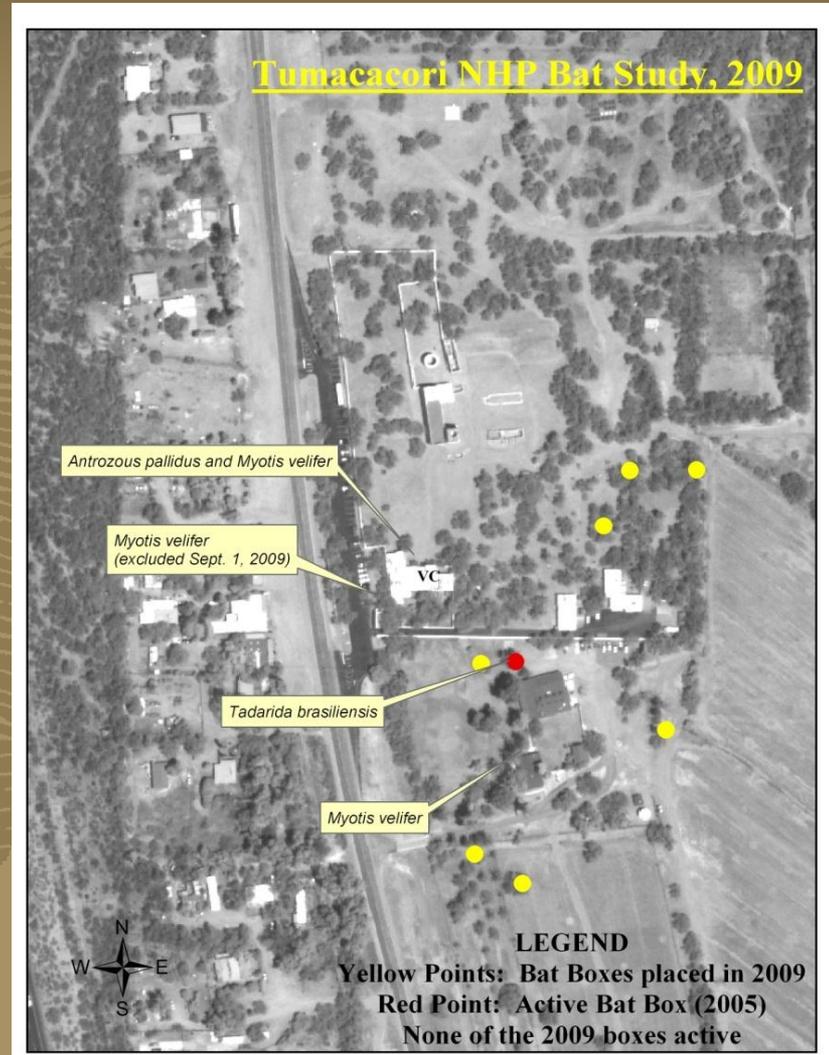
Netting may work in some places but not all

EXPERIENCE YOUR AMERICA



EXPERIENCE YOUR AMERICA

Exclusion Techniques-NPS





Closure is sometimes warranted

EXPERIENCE YOUR AMERICA

Exclusion at archaeological sites

- Difference between open air and closed air sites (sites under shelters or in caves)
- Many of the same solutions for buildings apply but there must be consideration of impacts



Pallid bat at Tumacacori

- Reverse-ability without damaging the site is key
- Need to consider how gaps are filled using exclusion materials (adhesives can be very damaging to walls)
- Must have a good understanding of materials comprising sites to understand impacts and determine if there is a need for exclusion (some buildings made of stone masonry may not be impacted by bat use)

Exclusion at archaeological sites and NHPA compliance

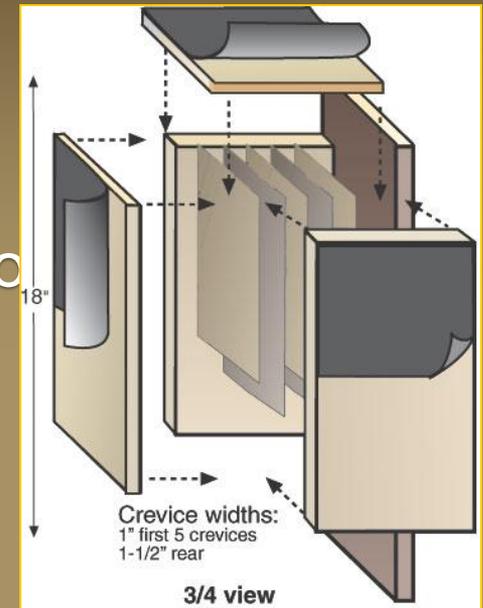
- Should consider how exclusion techniques will effect historic integrity, condition, and general setting or feel of the site.
- If exclusion is selected as an option consultation with State Historic Preservation Office and affiliated tribal governments is needed if resource is listed or is a potential eligible historic property (NRHP, NHL).

Exclusion and NEPA

- When to look for bats if construction planned (depends on where your at but, especially during summer.)
- NEPA compliance is needed
 - Planned (know bats are there)
 - Unplanned (discover bats during process)
STOP! Re-assess project.
- Environmental Screening Form

Other Considerations

- Monitoring exclusion results
 - bats may stay, but find another spot
- Bat houses and NPS policy
 - health and safety issues
- T & E considerations
 - time of year
 - possibility of young (avoid)
 - consultation required



Conclusions

- Plan ahead
- Iterative process/adaptive management
- Know where to go for help
- Educate all park Divisions on proper responses, who to contact (safety first but balanced)
- Identify and mitigate risks before attempted exclusion
- In some cases tolerance may be warranted
- Staff and public education is key
- Remember bats are beneficial and exclusion should attempt to consider effects on populations



Thanks!

EXPERIENCE YOUR AMERICA

Photo credits

- Photos of bats taken by NPS and Karen Krebbs during bat inventory project working with Arizona-Sonoran Desert Museum (CESU)
- All other photos taken by NPS (Tumacacori NHP and Casa Grande NM, Arizona)